An Automated Java Code Review Tool

PMD is an automated code review tool for Java. Using PMD with Eclipse can simplify software development by making the code cleaner and more understandable than ever before.

Last month we showed you how to create and use the PMD report generated as part of the project dashboard, using Maven. In this article we will explore the use of PMD (an automated code review tool for Java) in one of the most widely used tools—Eclipse.

Eclipse is a very popular extensible opne source IDE for Java and other languages. You can get the latest version of Eclipse from either the LFY CD or [http://www.eclipse.org/downloads/index.php].

PMD is a source code analyser for Java. It scans source code and looks for potential problems like:

- Empty try/catch/finally/switch blocks
- Unused local variables, parameters and private methods
- Empty if/while statements
- Overcomplicated expressions—unnecessary 'if' statements, 'for' loops that could be 'while' loops
- Classes with high cyclomatic complexity measurements

It automates the process of checking/reviewing Java code and thus makes it an ideal tool for projects that want to enforce coding standards. Running PMD against your source code will help you to make the code cleaner and more understandable.

You can get the complete list of checks that PMD can do from [http://pmd.sourceforge.net/]. PMD is available as a plug-in for Eclipse. You can get the latest version from either the LFY CD or [http://sourceforge.net/project/showfiles.php?group_id=56262].

For a better understanding on how to use PMD with Eclipse, we will use the same JEmailClient Java program that we shipped along with the LFY February 2005 CD. Copy the two Java files *JEmailClientInt.java* and *JEmailClient.java* from the CD-ROM to your system hard disk and create an Eclipse project.

We will use the Eclipse (version 3.0) Software Update feature to install the PMD plug-in automatically. Here are the steps:

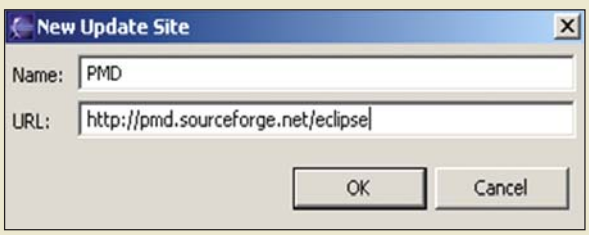

Figure 1: Eclipse new update site dialog

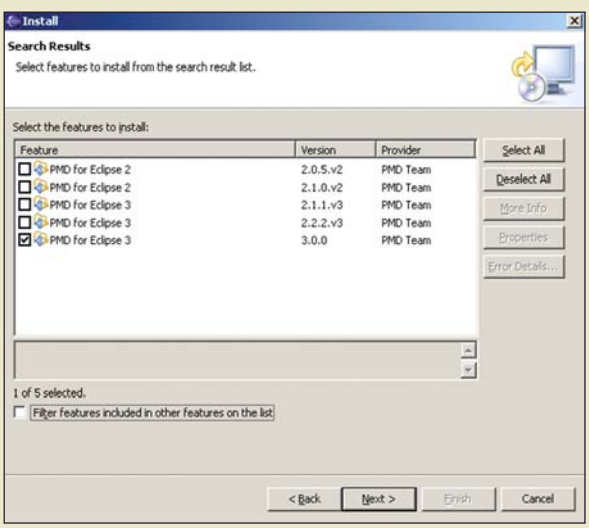

Figure 2: Eclipse feature install dialog

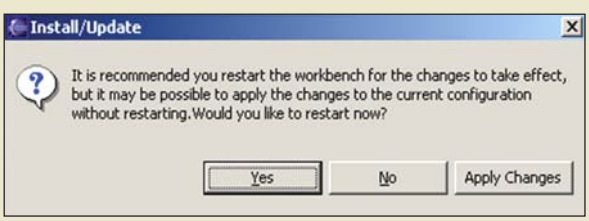

Figure 3: Eclipse install/update restart confirmation dialog

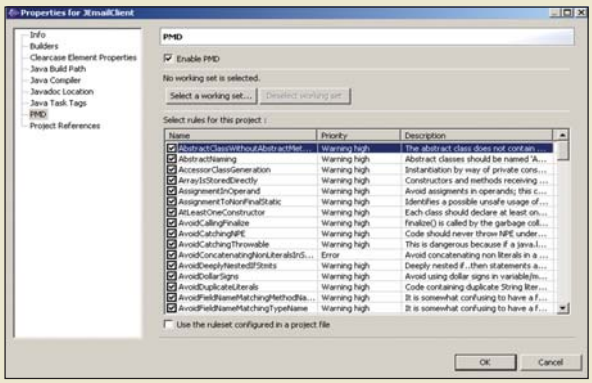

Figure 4: Eclipse project properties dialog

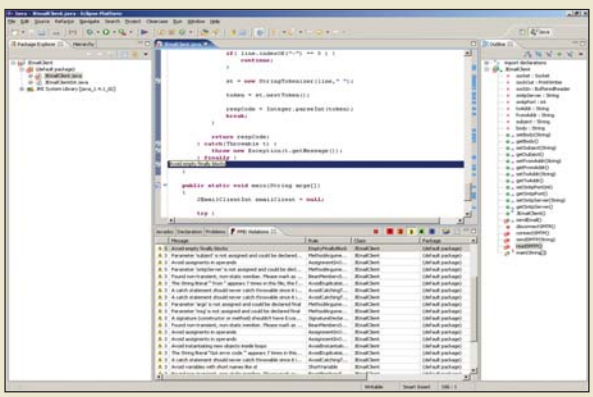

Figure 5: Eclipse showing a PMD violation

Step 1: Click *Help→Software Updates→Find* and Install

Step 2: Select 'Search for new features to install' in the Install/Update dialog

Step 3: Click 'New Remote Site' and enter the details as shown in Figure 1

Step 4: Select PMD version 3.0.0 as shown in Figure 2.

Step 5: When Eclipse automatically downloads and installs the plug-in, you will see a dialog as shown in Figure 3. Click 'Apply Changes' for Eclipse to apply the changes and restart Eclipse.

If everything goes well, you will see PMD getting listed in the project properties dialog as shown in Figure 4.

For Eclipse to use PMD for your project, choose the 'Enable PMD' option and select the rules for your project as shown in Figure 4.

To run PMD, right click on the filename and select *PMD→Check Code With PMD* menu. To view the PMD critics/violations, select *Window→Show View→Other→ PMD→PMD Violations*.

A sample PMD critics/violation is shown in Figure 5.

The violation/critic is about the empty finally block defined at line 186 in function *readSMTP*. If you are not going to do anything on the 'finally' block, it is good to delete this.

If you are not the author of the code, you can mark the review comments so that the author can work on it later. To mark review, right click on the violation and select 'Mark review'. Eclipse inserts a review comment for you automatically.

PMD spares us from one of the most boring but very important code review tasks. Used along with Eclipse, it will make your software development much easier than ever before.

References

Eclipse : http://www.eclipse.org/
PMD : http://pmd.sourceforge.net/

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